

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: George H. BuAbbud  
Serial No.: 09/932,867  
Filing Date: August 17, 2001  
Confirmation No.: 6937  
Group Art Unit: 2623  
Examiner: Hai V. Tran  
Title: RF RETURN OPTICAL TRANSMISSION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

REPLY BRIEF

Applicant has appealed to the Board of Patent Appeals and Interferences from the final decision of the Examiner issued December 29, 2005 and the Advisory Action issued April 6, 2006 finally rejecting Claims 1-5 and 7. In response to the Examiner's Answer of July 27, 2007, Applicant respectfully submits herewith their brief in reply.

REAL PARTY IN INTEREST

The present Application was assigned to Reltec Corporation, a Delaware corporation, as indicated by an assignment from the inventor recorded on May 11, 1999 in the Assignment Records of the United States Patent and Trademark Office at Reel 009953, Frames 0952-0953. Reltec Corporation changed its name to Marconi Communications, Inc. as indicated by a Change of Name document recorded June 28, 1999 in the Assignment Records of the United States Patent and Trademark Office at Reel 010043, Frames 0815-0819. The present Application was then assigned to Marconi Intellectual Property (Ringfence), Inc., a Delaware corporation, as indicated by an assignment from Marconi Communications, Inc. recorded on November 5, 2003 in the Assignment Records of the United States Patent and Trademark Office at Reel 014646, Frames 0607-0610. The present Application was then assigned to Advanced Fibre Access Corporation, a Delaware corporation, as indicated by an assignment from Marconi Intellectual Property (Ringfence), Inc. recorded on April 21, 2004 in the Assignment Records of the United States Patent and Trademark Office at Reel 014532, Frames 0723-0730. Advanced Fibre Access Corporation changed its name to Tellabs Bedford, Inc. as indicated by a Change of Name document recorded December 8, 2004 in the Assignment Records of the United States Patent and Trademark Office at Reel 016269, Frames 0577-0584.

RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

Claims 1-5 and 7 stand rejected pursuant to a Final Action issued December 29, 2005. Claims 1-5 and 7 are all presented for appeal.

STATUS OF AMENDMENTS

A Response to Examiner's Action was filed on March 30, 2005 in response to an Office Action issued December 17, 2004. Claims 1 and 7 were amended and Claim 6 was cancelled. A Response to Examiner's Action was filed on October 3, 2005 in response to an Office Action issued June 1, 2005. Claims 1 and 7 were amended. A Response to Examiner's Final Action was filed on February 28, 2006 in response to a Final Action issued December 29, 2005. No further amendments were made to the claims. An Advisory Action issued on April 6, 2006. Applicant filed a Notice of Appeal and Pre-Appeal Brief Request for Review on April 28, 2006. A Notice of Panel Decision from Pre-Appeal Brief Review issued on February 2, 2007 stating that the appeal is to proceed to the Board of Patent Appeals and Interferences.

SUMMARY OF CLAIMED SUBJECT MATTER

With respect to Independent Claim 1, there is provided a method of providing TV signals to multiple subscribers and bidirectional telephonic communications to a multiplicity of subscribers through a single optical fiber. (See FIGURE 3 and page 6, lines 9-13). The method includes transmitting light at a first wavelength carrying plain old telephone service telephonic signals from a first plurality of telephone related devices and at a second wavelength carrying TV signals from a TV signal source through an optical fiber from a first end to a second end. (See FIGURE 3 and page 10, lines 15-27). The first wavelength of light is received and first electrical signals within a first frequency band and representative of said plurality of plain old telephone service telephonic signals are generated. (See FIGURE 4B and page 11, lines 19-22). The second wavelength of light is received and second electrical signals within a second frequency band and representative of said TV signals are generated. (See FIGURE 4B and page 11, lines 15-17). Plain old telephone service telephonic electrical signals are transmitted to a plurality of telephone related devices and said second electrical signals are transmitted to a plurality of TV signal receiving devices. (See FIGURE 4B and page 11, lines 1-19 and lines 23-25). A plurality of return electrical plain old telephone service telephonic signals at said first frequency band representative of return telephonic information are generated and a plurality of TV related electrical signals at a third frequency band representative of TV related information from said plurality of subscribers are generated. (See FIGURE 4B and page 12, lines 4-7). The electrical signals carrying said return plain old telephone service telephonic signals at said first frequency band and said TV related electrical signals

carrying said TV related information at said third frequency band are multiplexed. (See FIGURE 4B and page 16, lines 9-12). The multiplexed electrical signals are received and light at said first wavelength representative of said return plain old telephone service telephonic signals and said TV related information is generated. (See FIGURE 4B and page 16, lines 12-14). The light at said first wavelength and carrying said return plain old telephone service telephonic signals and said TV related information is transmitted through said optical fiber from said second end to said first end. (See FIGURE 4B and page 16, lines 15-17). Light carrying said return plain old telephone service telephonic signals and said TV related information is received and a plurality of third electrical signals representative of said return plain old telephone service telephonic signals and a plurality of fourth electrical signals representative of said TV related information are generated. (See FIGURE 4A and page 13, line 26, to page 14, line 2). The third electrical signals are transmitted to said first plurality of telephone related devices and said fourth electrical signals are transmitted to said TV signal source. (See FIGURE 4A, page 13, lines 24-26, and page 14, lines 2-20).

With respect to Independent Claim 7, there is provided a Communication signal transmission apparatus for carrying unidirectional TV signals downstream from a source to a first user and for carrying TCM (time compression modulation) bidirectional plain old telephone service telephonic signals between said first user and a second user. (See FIGURE 3 and page 6, lines 9-13). The apparatus includes an optical fiber 42A suitable for simultaneously carrying two distinct wavelengths of light of a first wavelength and a second wavelength by WDM (wave division multiplexing) between a first

location and a second location. (See FIGURE 3 and page 11, lines 11-14). A conversion apparatus 20 is located at said second location 20 and connected to said optical fiber 42A, said conversion apparatus 20 converting optical signals at said first wavelength of light and carrying said unidirectional TV signals to electrical TV signals at a first frequency. (See FIGURE 4b and page 11, lines 15-17). The communication apparatus 20 converts optical signals at said second wavelength of light and carrying said TCM bidirectional plain old telephone service telephonic signals to electrical telephonic signals. (See FIGURE 4B and page 11, lines 19-22). The communication apparatus 20 converts electrical telephonic signals to TCM bidirectional telephonic optical signals at said second wavelength of light. (See FIGURE 4B and page 11, lines 19-22). A first electrical conductor 12B receives and carries TV signals at said first frequency from said second location to a TV signal user device 28. (See FIGURE 4B and page 14, line 25, to page 15, line 8). TV related signals at a second frequency are generated by said TV signal user device 28 connected to said first electrical conductor 12B and transmitted from said TV signal user device 28 at said second location. (See FIGURE 4B and page 15, lines 19-22). A pair of electrical conductors 109 and 111 receive and carry said bidirectional plain old telephone service telephonic signals between said second location and a user device 30B. (See FIGURE 4B and page 16, lines 2-9). A multiplexer 106 combines said TV related signals and said bidirectional plain old telephone service telephonic signals to produce said electrical telephonic signals converted to optical signals at said second wavelength of light by said conversion apparatus 20. (See FIGURE 4B and page 16, lines 9-12). A TV signal source 10 connected to said optical fiber 42A at said first

location modulates said first wavelength of light. (See FIGURE 4A and page 12, line 26, to page 13, line 1). A second converting device 18/52 converts electrical signal to optical signals at said first wavelength of light and optical signal at said second wavelength of light to electrical signals. (See FIGURE 4A and page 13, lines 1-3, and lines 21-24). A telephonic signal user device 30B sends and receives said bidirectional plain old telephone service telephonic signals. (See FIGURE 4b and page 16, lines 5-12).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,615,246 issued to Beveridge in view of U.S. Patent No. 6,577,414 issued to Feldman, et al.

2. Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,615,246 issued to Beveridge in view of U.S. Patent No. 6,577,414 issued to Feldman, et al. and further in view of a Hitachi Review article authored by Kitazawa, et al.



ARGUMENT

1. Claims 1-5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,615,246 issued to Beveridge in view of U.S. Patent No. 6,577,414 issued to Feldman, et al. According to M.P.E.P. §2143, to establish a prima facie case of obviousness, three criteria must be met. First, there must be some suggestion or motivation to combine the references. Second, there must be a reasonable expectation of success. Third, the prior art combination of references must teach or suggest all the claim limitations. The Examiner has not established that any criteria for a prima facie case of obviousness has been met in this instance.

First, there is no suggestion or motivation in the Beveridge patent or the Feldman, et al. patent to combine them as proposed by the Examiner. The Examiner has failed to show that there is some teaching, suggestion, or motivation to combine the Beveridge patent and the Feldman, et al. patent as proposed. The Beveridge patent is directed to a device for detecting the presence of spurious energy on a bus based network in order to remove the source of the spurious energy from the network. The Feldman, et al. patent is directed to a technique for integrating cable television services into a network that also provides Internet access and Internet Protocol telephony. The Examiner has not cited any language within the Beveridge patent or the Feldman, et al. patent that would suggest any capability for them to be combined. The Examiner only provides a baseless subjective and conclusory "it would have been obvious" statement for modifying and combining the Beveridge patent with the Feldman, et al. patent without providing any objective reasoning or citing any evidence of record to support such positions. In fact, the functionality of these cited patents are incompatible with one

another as the Feldman, et al. patent is specifically uses Internet Protocol telephony and no use of plain old telephone service. The Examiner has not cited any justification from these cited patents that their incompatible functionalities could even remotely be combined as has been proposed. The rationale provided by the Examiner for their combination is purely subjective conjecture and speculation with no objective reasoning being provided to support combining the references as has been proposed. The Examiner is merely taking bits and pieces of unrelated subject matter in an improper hindsight attempt at reconstructing the claimed invention. A statement that modifications of the prior art to meet the claimed invention would have been well within the ordinary skill of the art at the time the claimed invention was made because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. See M.P.E.P. 2143.01. Since the Examiner has not provided any proper reasoning, let alone objective reasoning, the burden to establish the first criteria of a prima facie case of obviousness has not been met.

In the Examiner's Answer, the Examiner justifies the combination of the Beveridge and Feldman, et al. patents based on their disclosure of a Hybrid Fiber Coax (HFC) network. However, the HFC network of the Beveridge patent operates in a different manner and solves a different problem than the HFC network of the Feldman, et al. patent. The Beveridge patent provides video signals and POTS telephony capability over a coax cable network to a plurality of subscribers. The coax connection to each subscriber includes a jamming detection and disconnection device that detects for spurious signals

introduced from a particular subscriber that may affect other subscribers on the coax cable network and cuts off service to the particular subscriber if spurious signals are detected. In contrast, the Feldman, et al. patent provides video signals, data signals, and IP telephony capability to a plurality of subscribers over a passive coax bus. The Feldman, et al. patent has no disclosure concerning the handling of POTS telephony and one of skill in the art would hardly consider the Feldman, et al. patent when working on a network that requires a POTS telephony capability. Thus, the Examiner has not established any support for combining the Beveridge and Feldman, et al. patents as needed for a prima facie case of obviousness.

Second, a reasonable expectation of success has not been shown by the Examiner. There has also been no showing that the proposed combination of the Beveridge patent and the Feldman, et al. patent would even be able to perform the functionality of the claimed invention. The Examiner, without the improper hindsight look through the claimed invention, has not addressed how the proposed combination of the Beveridge patent and the Feldman, et al. patent would have any success whatsoever let alone a reasonable expectation of success based on their incompatible functionalities. Moreover, the Examiner has failed to show that the proposed combination would even work for its intended purpose according to the claimed invention. Therefore, Applicant respectfully submits that the Examiner has failed to establish the second criteria for a prima facie case of obviousness.

In the Examiner's Answer, the Examiner asserts that the Feldman, et al. patent is representative of a reasonable expectation of success if one of skill in the art were to modify the Beverly patent to improve a Hybrid Fiber Coax

network. However, the Feldman, et al. patent has no concern for POTS telephony. The Examiner has not provided any showing that the features of the Feldman, et al. patent are even compatible with POTS telephony let alone work in a POTS telephony capable network. Thus, the Examiner has not established any expectation of success let alone a reasonable expectation of success required for a prima facie case of obviousness.

Third, the Examiner has not shown that the proposed Beveridge - Feldman, et al. combination teaches or suggests all of the claim limitations. For example, Independent Claim 1 recites ". . . transmitting light at a first wavelength carrying plain old telephone service telephonic signals from a first plurality of telephone related devices and at a second wavelength carrying TV signals from a TV signal source through an optical fiber from a first end to a second end; receiving said first wavelength of light and generating first electrical signals within a first frequency band and representative of said plurality of plain old telephone service telephonic signals; receiving said second wavelength of light and generating second electrical signals within a second frequency band and representative of said TV signals; . . . transmitting light at said first wavelength and carrying said return plain old telephone service telephonic signals and said TV related information through said optical fiber from said second end to said first end . . . ." The Examiner readily admits that the Beveridge patent fails to disclose these features. The Examiner cites the Feldman, et al. patent in combination with the Beveridge patent to support the deficiencies thereof. However, the Feldman, et al. patent clearly recites a downstream wavelength of 1.5  $\mu\text{m}$  and an upstream wavelength of 1.3  $\mu\text{m}$ . Thus, the Feldman, et al. patent fails to disclose

receiving first and second wavelengths of light as required by the claimed invention. Moreover, the Feldman, et al. patent fails to transmit light at the first wavelength that carries a return plain old telephone service telephonic signals with TV related information as provided by the claimed invention. The wavelengths used by the Feldman, et al. patent over its optical fiber are different for downstream and upstream transport. In addition, the Feldman, et al. patent is specifically directed to integrating broadcast cable television services with high speed Internet access and Internet Protocol telephony. There is no disclosure in the Feldman, et al. patent related to integrating plain old telephone service telephony with television signals as provided in the claimed invention.

The Examiner indicates that the Feldman, et al. patent discloses a downstream wavelength of 1.5  $\mu\text{m}$  on the optical fiber being a combination of multiple wavelengths. However, individual local headend wavelengths are separated and each inserted into a different branch of the network. See col. 7, lines 20-24, of the Feldman, et al. patent. Thus, each local headend wavelength is transmitted over its own 1.5  $\mu\text{m}$  optical fiber path. Thus, the Feldman, et al. patent only discloses 1.5  $\mu\text{m}$  wavelength over an optical fiber from a first end to a second end and a 1.3  $\mu\text{m}$  wavelength over the optical fiber from the second end to the first end. Only one wavelength is used in each transport direction over the optical fiber of the Feldman, et al. patent.

In addition, the Examiner further asserts that Applicant's argument of the Feldman, et al. patent failing to disclose transmitting light at the first wavelength carrying a return plain old telephone service telephonic signals with TV related information is baseless because the claimed invention

does not include this limitation. Applicant respectfully submits that the claimed invention does include this limitation virtually word for word as argued by Applicant in the Response to Examiner's Action. See Claim 1 and specifically lines 5-8, of page 3 of the Response to Examiner's Final Action. Thus, the Examiner is incorrect with this assertion. Therefore, Applicant respectfully submits that Claims 1-5 are patentably distinct from the proposed Beveridge - Feldman, et al. combination.

In the Examiner's Answer, the Examiner asserts that the Feldman, et al. patent discloses the features of the claimed invention as cited above. First, the Feldman, et al. patent provides an Internet Protocol telephony capability and not a POTS telephony capability as required by the claimed invention. Thus, a POTS telephony capability is not provided by the Feldman, et al. patent. Second, the Feldman, et al. patent does not show a first downstream wavelength carrying plain old telephone service telephonic signals and a second downstream wavelength carrying TV signals being sent on an optical fiber toward a subscriber. The Feldman, et al. patent clearly discloses a single downstream wavelength, namely 1.5  $\mu\text{m}$ , on its optical fiber and not the use first and second downstream wavelengths on an optical fiber as required by the claimed invention. As a result, CWDM 132/232 of the Feldman, et al. patent uses only one 1.5  $\mu\text{m}$  wavelength for downstream transmission over its optical fiber. Thus, the Feldman, et al. patent is not capable of transmitting light at first and second wavelengths on its optical fiber as required by the claimed invention. Therefore, the Examiner has failed to show that the Feldman, et al. patent when viewed with the Beveridge patent teaches each and every limitation of the claimed invention as required for a prima facie case of obviousness.

Thus, the Examiner has failed to establish any of the criteria for a prima facie case of obviousness. As a result of the improper combination of the reference, the lack of any expectation of success for the combination, and the lack of disclosure in the cited references by the Examiner, there is an insufficient basis to support the rejection of the claims.

2. Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,615,246 issued to Beveridge in view of U.S. Patent No. 6,577,414 issued to Feldman, et al. and further in view of a Hitachi Review article authored by Kitazawa, et al. Claim 7 includes the features discussed above with reference to Claim 1 and shown to be patentably distinct from the proposed Beveridge - Feldman, et al. combination. Moreover, the Kitazawa, et al. paper does not include any additional disclosure combinable with either the Beveridge or Feldman, et al. patents that would be material to patentability of these claims. Therefore, Applicant respectfully submits that Claim 7 is patentably distinct from the Beveridge - Feldman, et al. - Kitazawa, et al. combination.



CONCLUSION

Applicant has clearly demonstrated that the present invention as claimed is clearly distinguishable over all the art cited of record, either alone or in combination, and satisfies all requirements under 35 U.S.C. §§101, 102, and 103, and 112. Therefore, Applicant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a Notice of Allowance of all claims.

The Commissioner is hereby authorized to charge any fees or credit any overpayments associated with this Application to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

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CLAIMS APPENDIX

1. (Previously Presented) A method of providing TV signals to multiple subscribers and bidirectional telephonic communications to a multiplicity of subscribers through a single optical fiber comprising the steps of:

transmitting light at a first wavelength carrying plain old telephone service telephonic signals from a first plurality of telephone related devices and at a second wavelength carrying TV signals from a TV signal source through an optical fiber from a first end to a second end;

receiving said first wavelength of light and generating first electrical signals within a first frequency band and representative of said plurality of plain old telephone service telephonic signals;

receiving said second wavelength of light and generating second electrical signals within a second frequency band and representative of said TV signals;

transmitting said plain old telephone service telephonic electrical signals to a plurality of telephone related devices and said second electrical signals to a plurality of TV signal receiving devices;

generating a plurality of return electrical plain old telephone service telephonic signals at said first frequency band representative of return telephonic information and a plurality of TV related electrical signals at a third frequency band representative of TV related information from said plurality of subscribers;

multiplexing said electrical signals carrying said return plain old telephone service telephonic signals at said first frequency band and said TV related electrical signals carrying said TV related information at said third frequency band;

receiving said multiplexed electrical signals and generating light at said first wavelength representative of said return plain old telephone service telephonic signals and said TV related information;

transmitting light at said first wavelength and carrying said return plain old telephone service telephonic signals and said TV related information through said optical fiber from said second end to said first end;

receiving said light carrying said return plain old telephone service telephonic signals and said TV related information and generating a plurality of third electrical signals representative of said return plain old telephone service telephonic signals and a plurality of fourth electrical signals representative of said TV related information; and

transmitting said third electrical signals to said first plurality of telephone related devices and said fourth electrical signals to said TV signal source.

2. (Original) The method of claim 1 wherein said first wavelength of light is 1310 nanometers and said second wavelength of light is 1550 nanometers.

3. (Original) The method of claim 1 wherein said highest frequency of said first frequency band is less than about 60 KHz.

4. (Original) The method of claim 3 wherein said third frequency band is between about 5 and about 50 MHZ.

5. (Original) The method of claim 4 wherein said second frequency band is between about 50 MHZ and about 800 MHZ.

6. (Canceled).

7. (Previously Presented) Communication signal transmission apparatus for carrying unidirectional TV signals downstream from a source to a first user and for carrying TCM (time compression modulation) bidirectional plain old telephone service telephonic signals between said first user and a second user comprising:

an optical fiber suitable for simultaneously carrying two distinct wavelengths of light of a first wavelength and a second wavelength by WDM (wave division multiplexing) between a first location and a second location;

conversion apparatus located at said second location and connected to said optical fiber, said conversion apparatus converting optical signals at said first wavelength of light and carrying said unidirectional TV signals to electrical TV signals at a first frequency, converting optical signals at said second wavelength of light and carrying said TCM bidirectional plain old telephone service telephonic signals to electrical telephonic signals, and converting electrical telephonic signals to TCM bidirectional telephonic optical signals at said second wavelength of light;

a first electrical conductor for receiving and carrying TV signals at said first frequency from said second location to a TV signal user device;

TV related signals at a second frequency generated by said TV signal user device connected to said first electrical conductor and transmitted from said TV signal user device at said second location;

a pair of electrical conductors for receiving and carrying said bidirectional plain old telephone service telephonic signals between said second location and a user device;

a multiplexer for combining said TV related signals and said bidirectional plain old telephone service telephonic signals to produce said electrical telephonic signals converted to optical signals at said second wavelength of light by said conversion apparatus;

a TV signal source connected to said optical fiber at said first location to modulate said first wavelength of light;

a second converting device for converting electrical signal to optical signals at said first wavelength of light and optical signal at said second wavelength of light to electrical signals; and

a telephonic signal user device for sending and receiving said bidirectional plain old telephone service telephonic signals.

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EVIDENCE APPENDIX

None

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RELATED PROCEEDINGS APPENDIX

None



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CERTIFICATE OF SERVICE

None